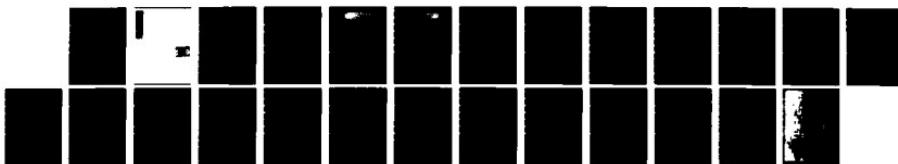


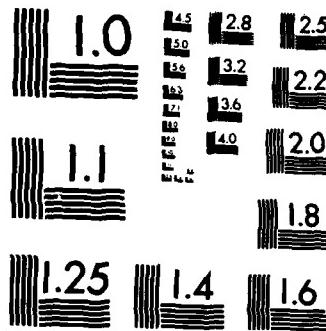
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USAWC MILITARY STUDIES PROGRAM

THE BANNING OF CHEMICAL WEAPONS:
TANTALUS REVISITED

INDIVIDUAL ESSAY

by

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14 April 1983

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Since the mid-nineteenth century, nations have sought to limit the use of chemical weapons with varying degrees of success. On-going negotiations in Geneva by the 40-member Committee on Disarmament seek the elaboration of an international convention banning the development, production, stockpiling and retention of chemical weapons. This essay traces some of the historical efforts made by various international fora to ban the use of chemical weapons and identifies the key issues that have precluded the realization of a satisfactory international convention. The current proposals by the United States and the USSR are analyzed, with particular attention given to the troubling issues of verification and compliance. Conclusions as to the practicality and attainability of a chemical weapons ban are drawn.

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THE BANNING OF CHEMICAL WEAPONS: TANTALUS REVISITED

On 4 February 1983, Vice President of the United States George Bush appeared before the United Nations Committee on Disarmament meeting in Geneva, Switzerland and clearly stated the intent of the United States to eliminate "the threat of chemical warfare by achieving a complete and verifiable ban on chemical weapons."¹ This seemingly simple and straightforward statement of US policy is the result of an evolutionary process that has seen the country wrestle with the divergent moral and pragmatic aspects of a deeply troubling issue. Over the course of many decades, the US position has vacillated between the extremes of total acceptance to qualified rejection of Chemical Warfare (CW) as a means of prosecuting wars. Public interest has also ebbed and flowed with a regularity that has been determined to be coincident with the 11-year sunspot cycle.² No causal relationship has been established, but there can be no doubt that any elevation of CW matters in the public consciousness charges the air with emotional static electricity and disrupts established patterns of international discourse. It is the intent of this paper to examine this controversial issue and to assess the probability of the US meeting with any degree of success in its attempt to remove an ancient but infrequently used weapon from the arsenals of modern states.

Underlying the position expressed by the Vice President is a more complex and exact statement of US policy regarding CW. As expressed in the Fiscal Year 1983 Arms Control Impact Statements presented to Congress by the US Arms Control and Disarmament Agency (ACDA), current US policy is to,

improve defensive and deterrent retaliatory capabilities against the use of chemical weapons while working to achieve a complete and verifiable ban on their production, development, and stockpiling. As part of a credible and effective deterrent, the US seeks to achieve an adequate CW warning and protective capability and the ability and means to retaliate with chemical weapons in such a manner as to neutralize the advantages gained by enemy use of CW and to seek termination of the use of chemical weapons at the lowest level possible.

Salient features of this policy statement can be categorized into two areas: first, that the US will seek to maintain an effective CW offensive capability as a deterrent, will employ chemical weapons only if used first against its own forces or its allies, and will maintain adequate defensive and protective capabilities. And second, it will accomplish these tasks while seeking a complete and verifiable ban on chemical weapons. In other words, in keeping with the positions taken on other attempts to negotiate limitations on or reductions of nuclear weapons, the US wants to bargain from a position of strength.

However, a serious asymmetry exists between US policy and its ability to implement that policy. Regarding the first aspect of the policy, in recent testimony before the Senate Armed Services Committee, General Bernard W. Rogers, the Supreme Allied Commander, Europe stated,

we do not have the proper types of chemical weapons that are necessary to deter their use by the Soviets.... The political guidelines under which I function say that I will be prepared to use chemical weapons in retaliation for the use against us by any aggressor. Under current conditions, I cannot fulfill that directive.⁴

This view is supported by the State Department which indicated in a 1982 Fact Sheet, "our current chemical weapon stockpile . . . is inadequate to provide an effective deterrent."⁵ That such an asymmetry exists has been challenged, and arguments can be found to the effect that the US stockpile of chemical weapons is adequate to support the policy.⁶ In addition, an analysis of the Fiscal Year 1982 Arms Control Impact Statements by the

Congressional Research Service put forth the argument that a retaliatory capability becomes less important as improved protection measures reduce the vulnerability of forces to CW.⁷ Regardless of the relative merits of the arguments, it is fact that the US is seeking to enhance its offensive CW capabilities by producing and stockpiling binary chemical weapons and thus make its chemical warfighting posture and its policy copacetic. Given that the US is successful in these efforts to protect itself from an aggressor's use of chemical weapons and effectively retaliate in kind, how obtainable is the second aspect of the policy--the achievement of a complete and verifiable ban on CW? The remainder of this paper will investigate this question.

In the latter part of the nineteenth century, many attempts were made, in the name of humanity, to codify the customary rules by which nations conducted war. One of the earliest attempts occurred in 1868 when the Russian Czar convoked an international military commission "to consider the desirability of forbidding the use of certain projectiles in time of war among civilized nations."⁸ The "certain projectiles" the Czar had in mind were those of given size that were designed to explode upon impact, thereby causing more severe wounds and increasing the likelihood of death. In the minds of some legalists, the reference to projectiles charged with "fulminating or inflammable substances"⁹ is the first direct reference to chemical weapons and any attempt to outlaw their use in warfare. Regardless of the correctness of their interpretation of the Declaration of St. Petersburg, as the deliberations of the Czar's commission came to be known, the notion of projectiles charged with chemical substances began to receive increased attention. In 1899, the Hague Gas Declaration provided that the signatories "agree to abstain from the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases."¹⁰ In 1907, a

follow-on conference specifically forbade the employment of poison or poisoned weapons.¹¹ The events following the ratification of the Hague Gas Declaration by most of the European powers provide an interesting commentary on the fine art of international relations and arms control. The language of the declaration is highly restrictive, referring to the use of projectiles, the sole object of which is to emit gases. Germany, a signatory to the declaration, avoided violation of the treaty in World War I by using ground emplacement of chlorine cylinders (not projectiles) and releasing the gas into the prevailing winds. A cursory reading of the prohibitions reveals another area for selective interpretation--the sole object of the projectile must be to emit gas. Any number of projectiles can be designed to release gases in conjunction with another effect, such as blast or illumination. This quick analysis of the wording of the convention points to a significant aspect of arms limitation agreements: the more general the wording, the less impact it will have; the more restrictive the wording, the easier it will be to circumvent. As an interesting historical note, the United States, through its representative to the conference, Captain Alfred Thayer Mahan, did not accede to the declaration because no shells that emitted gases had yet been developed, therefore there was no evidence that such projectiles would be more or less humane than existing weapons.¹²

In 1922 the United States agreed to the provisions of the Washington Disarmament Conference which bound the signatory nations to a prohibition of use of "asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices" in wars between themselves.¹³ In principle, the US sided with those nations seeking an abolition of chemical warfare. Apparently the experiences of World War I caused US leadership to reconsider the position taken earlier by Mahan and actively seek a prohibition on the use

of chemical munitions. It is worth noting that the emphasis was still on the prohibition of the use of chemical weapons, not on preventing the development, production, and stockpiling of such weapons. After World War I, the various peace treaties signed between the allies and the defeated nations expanded the area of concern and forbade the manufacture and importation of chemical warfare agents, but only in regard to the activities of the defeated nations. No universal prohibition was attempted then and no intent to do so found its way into subsequent efforts to outlaw chemical warfare. Even in the famous Geneva Protocol of 1925, the emphasis was on preventing the use of chemical weapons in warfare and not on preventing their development, production, or stockpiling. In fact many signatories to the protocol, the US included, ratified or acceded with reservations, reservations that, for the most part, allowed retaliation in kind if prohibited weapons were used against them. In effect the Geneva Protocol became a "no first use" policy for the signatory nations and as such recognized the necessity for these nations to maintain stocks of chemical weapons. At the time, it appeared that the wording of the Geneva Protocol was acceptable to the US (in fact the US delegation to Geneva had tabled the language of the prohibition in the first place). But an intense lobbying effort by the Chemical Warfare Service, veterans groups, the American Chemical Society, and the National Association for Chemical Defense persuaded the Senate to refer the issue to the Foreign Relations Committee in December 1926; it remained dormant there, however. It resurfaced in the full Senate in 1947 when it was formally withdrawn.¹⁴ The US attitude toward chemical warfare during this period was reflected by General Douglas MacArthur. His "attitude toward the thorny problems of chemical warfare was that a policy of prohibition was fine as long as nothing interfered with the ability of the United States to prepare for what was prohibited."¹⁵

The ink had hardly dried on the Geneva Protocol when many countries began to feel that the instrument was insufficient and that measures were needed to provide assurances that no preparations to conduct chemical warfare were being taken by nations.¹⁶ From then until now, under the auspices of the League of Nations and now under the United Nations, various commissions, committees and conferences have wrestled with ways and means of totally eliminating chemical weapons. In general, most delegations

agreed that the weapons in question belonged to a category of arms most offensive and most threatening to civilians and therefore subject to qualitative disarmament, meaning that their possession or use should be absolutely prohibited. But absolute prohibition was deemed possible only if manufacture and storage of toxic substances and appliances for their employment, as well as training in their use, were also forbidden.¹⁷

The thorny issue was, and remains, how to provide assurance that all parties are observing the details of a treaty that bans the development, production, and stockpiling of chemical weapons.

The current effort to obtain an agreement between nations on the status of CW is taking place in Geneva by the 40-member Committee on Disarmament (CD), an autonomous body linked to the United Nations (UN) through its secretary who is the personal representative of the UN Secretary-General. The 40 members of the committee include the five nuclear-weapon States (the US, USSR, United Kingdom, Peoples Republic of China, and France) and 35 other States that represent a wide range of interests but constitute a rough political and geographical balance.¹⁸ The committee operates on a consensus basis and through an ad hoc working group specializing in chemical warfare is seeking,

to elaborate a convention on the complete and effective prohibition of the development, production and stockpiling of chemical weapons and on their destruction, taking into account all existing proposals and future initiatives, with the view of enabling the committee to achieve agreement at the earliest date.¹⁹

Included on the agenda for committee action is the formulation of "effective verification methods in relation to appropriate disarmament measures, acceptable to all parties concerned."²⁰

Since the breakdown of US-USSR bilateral negotiations in 1979, the CD has made some progress in formulating an acceptable agreement but significant issues have yet to be resolved, especially in the areas of verification and compliance. The ad hoc working group has established nine open-ended contact groups, each charged with investigating and debating specific elements of a chemical weapons convention. The nine elements of the convention under consideration are: Scope; Definitions; Declarations; Destruction, Diversion, Dismantling, and Conversion; General Provisions on Verification; Preamble and Final Clauses; National Implementation Measures; National Technical Means of Verification; and finally Consultation and Cooperation-Consultative Committee. The topics suggest the broad scope and complexity of the task before the ad hoc working group and dramatically illustrate the increased level of sophistication international negotiations have taken on since the early, inadequate attempts at limiting the use of CW were made. The latest report of the CD submitted to the thirty-seventh session of the UN General Assembly provides the results of the working group's deliberations and a careful reading of it does not provide the reader with an optimistic view of the near term attainability of a CW weapons ban. The contact group report on the General Provisions on Verification element was particularly vague and lacking in substance, suggesting that there are severe problems in that area. According to the 1981 Arms Control and Disarmament Agency annual report,

constructive work was also accomplished in the areas of verification, and we and our allies were successful in obtaining broad support for adequate and effective verification of any CW prohibition. The difficulties and divergencies of view on specific

verification measures, however, were illuminated more sharply than in the previous year.²¹

A translation of the "bureaucratese" of this report indicates there isn't much to be encouraged about in the verification area. Since verification and the problems associated with it are the principal impediments to the realization of CW weapons ban agreement, a more detailed examination of this area is in order.

In its simplest form, the purpose of verification is "to provide assurance of compliance with the provisions of the convention."²² In a more complex form, it is a

process, specifically established or approved, by a disarmament agreement, carried out by individual state parties to the agreement, either reciprocally or not, or by an international body established or empowered to carry out the process, by personnel or by technical means, in order to determine the degree to which the parties to the agreement have implemented its provisions and thereby observed or discharged their obligations under the treaty.²³

Regardless of the form, the "basic function of verification is to gather information."²⁴ A broader view of the function of verification incorporates the following elements:

1. Deterrence of violation, inducing or enforcing compliance by the threat of discovery of violations.
2. Reassurance for the security of states through confirmation that a treaty is being implemented, or through a high probability of detecting violations if they occur; thus the function of confidence building.
3. Channel of communication.
4. Precedent for subsequent, more advanced stages of disarmament.
5. Mechanism for distinguishing between major and minor violations.²⁵

In seeking a complete and verifiable ban of chemical weapons, the US is emphasizing the second element mentioned above. The US and the USSR--two

superpowers, each possessing significant CW capabilities--have traditionally faced each other under a cloud of mistrust and doubt about the other's intentions. No statement by one goes unchallenged or unrepudiated by the other. Consequently it seems only reasonable and proper that the US should seek reassurances that its security is not being threatened by its adherence to a treaty. The US simply does not trust the USSR and doesn't want to get caught unawares if the Soviets violate any agreement. It is worth noting that the 1972 ban on biological and toxin weapons did not include any verification provisions, and the Soviets, a signatory to the convention, have since used toxin weapons in Laos, Kampuchia, and Afghanistan.²⁶ In the face of such blatant disregard for an international convention, critics of US arms control efforts are charging that it is pointless to sign any agreements with the Soviets. In recent Senate testimony, Under Secretary of State for Political Affairs, Lawrence Eagleburger, answered those critics by saying. "It is not that arms control is pointless: it is that we have to do a better job of it . . . if arms control is to work, agreements of this level must be fully and effectively verified."²⁷

But the USSR is also proposing that provisions for verification be included in a convention, so it would seem agreement should not be too difficult to achieve. Nothing could be further from the truth. In July 1982, the USSR tabled a proposal outlining the basic provisions of a convention that would prohibit the development, production, and stockpiling of chemical weapons and require destruction or conversion of existing stockpiles. The section of the proposal dealing with verification indicates that verification of compliance would be based on a combination of national and international measures. The national measures would consist of the establishment of a Committee of National Verification whose "composition, functions and methods of work should be determined by the State Party to

the Convention in accordance with its constitutional forms."²⁸ This, in simple terms, is self-monitoring. The international measures mentioned in the proposal are also tantamount to self-monitoring for they require that verification be carried out through "consultations and cooperation between States Parties as well as through the services of the Consultative Committee of States Parties to the Convention."²⁹ This Consultative Committee would be made up of all parties to the convention and would have certain, as yet unspecified, responsibilities with respect to verification. In any event, if one State Party has reason to suspect a violation on the part of another State Party, and bilateral confrontation has been unsatisfactory, the matter could be placed before the Consultative Committee. The USSR proposal states that any State Party receiving a request for information from the Consultative Committee "may treat this request favorably or decide otherwise."³⁰ Throughout the document, the USSR reveals itself as loathe to allow independent, third-party verification. The only concession to the need for international on-site inspections it makes is a reference to a "possibility" in the areas of stockpile destruction and permitted production activities.³¹

In contrast to the USSR proposal, the US proposal submitted in February of 1983 calls for recurring international on-site inspections of all areas covered by the convention, for the duration of the convention. The proposal even calls for the installation of sensors at declared CW facilities to permit the monitoring of activities by the Consultative Committee. Each party would be "obligated to cooperate fully with the Consultative Committee in the exercise of its verification responsibilities."³² These responsibilities would include conducting both systematic and ad hoc on-site inspections; systematic inspections would be preplanned and agreed upon, ad hoc inspections would be those requested by a party and agreed to by at

least five members of a fact finding panel appointed by the Consultative Committee.³³ The verification system proposed by the US has been called "unprecedentedly complex and intrusive," but necessary to the realization of a suitable convention.³⁴ However, it appears that the US position is not as rigid as it seems at first glance. Ambassador Louis Fields, speaking before the CD this past February, said "we are not seeking absolute verification. We recognize that some risks will have to be accepted. However, we do insist that these risks will be minimized."³⁵ Whether this is just a statement of the obvious--nothing can be absolutely verified and risk will always be present--or a statement of the willingness of the US to accept some middle ground with a higher level of risk is difficult to discern. But the US proposal is a good point of departure for negotiating because it represents the other end of the spectrum from the USSR. Considerable room between the extremes exists for maneuvering and the reaching of a compromise position. The verification and compliance issue just may not be as intractable as it appears.

The difficulties associated with establishing an effective verification system vary greatly, depending primarily on the degree of technical sophistication of a country's chemical industry. The most severe challenge to a verification system occurs in highly industrialized countries capable of producing a broad range of CW agents. In general, CW agents can be classified into three groups:

- (a) those agents for which there is not legitimate peaceful use,
- (b) those normally produced in large quantities for industrial purposes, and (c) those agents which as such have no peaceful use but employ processes or intermediates which do.³⁶

An effective verification system will have to discriminate between the groups and provide a means for determining ultimate use. This is a difficult task, but not an impossible one. Any country with a CW capability

will have to engage in one or more of the following activities: Research, Development, Test and Evaluation (RDTE); Production; Transport and Storage; Training. These activities are subject to various types of search methods that can be used for verification purposes. The following table³⁷ indicates those activities where the search methods can be used most effectively:

Activities	<u>Search Method</u>				
	Budgetary inspection Note 1	Literature surveillance	Remote observation Note 3	Economic analysis Note 1	Inspection teams
Research	X	-	-	-	-
Development	X	X Note 2	-	-	X
Field testing and evaluation	X	-	X	-	X
Production of agents and weapons	X	-	X	X	X
Transport and storage	X	-	X	-	X
Training	X	-	X	-	X

Notes: 1-Applicable only in a country where there is open and unrestricted access to data.
 2-It is generally agreed that open publication and discussion are essential to stimulating and achieving good science. Secrecy at this stage would be counterproductive.
 3-Sometimes referred to as national technical means.

As shown in the table, the most promising search method across the full spectrum of CW activities and applicable to all countries is the use of inspection teams, which is without a doubt the most intrusive method. A 1972 study by Midwest Research Institute (MRI) examined the reliability of inspections made on-site and those made off-site (at the plant perimeter). The conclusion reached by MRI was that plant perimeter inspections are of limited value unless there can be continuous observation.³⁸ The net result, then, is that effective verification requires on-site inspection, and the

intrusion that goes with it is a necessary price to be paid for the security provided.

There are techniques that have been developed that can reduce the reliance on on-site inspection teams. It is generally accepted that verification need not be 100 percent effective in order to fulfill its purpose.³⁹ Consequently, less effective methods than on-site inspections can be used, provided they are used in conjunction with other, independent methods. Using simple probability theory, it can be shown that the probability of detecting a violation is amplified by using several independent, low probability verification methods.⁴⁰ It should therefore be sufficient in a treaty to rely on several less intrusive verification methods than on a single highly intrusive one, especially if intrusiveness is an overriding issue.

Another interesting argument for reducing the verification requirements of a treaty has been put forth by Matthew Meselson and Julian Perry Robinson. In a 1980 Scientific American article they wrote,

It is important to note in this regard [that a verification system need only provide a high likelihood of detecting CW preparations on a scale large enough to constitute a major military threat] that the effectiveness of verification measures is enhanced by a high level of chemical defense. Good defense greatly raises the scale of chemical warfare preparation needed to constitute a major military threat, making concealment more difficult and intrusive inspection less necessary.⁴¹

Taking another approach, the Stockholm International Peace Research Institute (SIPRI) offers a rather startling argument concerning the lack of need for verification in a CW treaty where the parties possess nuclear weapons. The proposition goes as follows: chemical weapons, given the current levels of nuclear weapons, make little impact on the overall balance of military strength; hence, an increased capability will not make a significant difference and it is irrelevant whether the increase is detected

or not. It is only when chemical weapons make a significant contribution to a nation's overall military strength that verification issues become important.⁴² Whether this argument is reasonable when nuclear parity and a significant asymmetry in chemical capability exists, is open to question. From the narrow goal of achieving a chemical arms control treaty it makes sense. However if unreported violations (because no verification system exists) allowed one party to gain or maintain a chemical capability and use it, the other party might have no recourse but to use nuclear weapons in retaliation. Nuclear war would be a large price to pay for having achieved an unverified CW weapons ban agreement. Of course this is the situation the US and NATO find themselves vis-a-vis the USSR and Warsaw Pact, and is a prime reason the US is attempting to improve its CW offensive capability through the development of binary munitions. The US simply does not want to be drawn into nuclear conflict because of the use of chemical weapons.

In Greco-Roman mythology, Tantalus was doomed to forever have the objects of his desires recede from his reach. In reviewing the past and current attempts to achieve an effective ban on the use of chemical weapons in warfare, it seems as if that also will remain out of reach. The two prime players, the US and USSR, continue to tantalize one another with apparent concessions: the US indicating that absolute verification is not necessary, and the USSR offering a "possibility" of scheduled on-site inspections. Within the international forum of the CD,

the prevailing pattern, familiar from other arms control contexts, [is] that of a conversation being conducted at different levels simultaneously with little benefit to actual communication: from the East a broad-brush treatment stressing the supposed simplicity of the whole issue, from the West a preference for detailed analysis which emphasized its complexity, from most of the nonaligned a generalized impatience, and from the Swedish delegation a steady stream of working papers at a level of sophistication peculiar to Sweden.⁴³

Given such an environment, is it reasonable to expect an agreement which meets the stated US goal of a "complete and verifiable ban on chemical weapons?"

To answer this question one must consider the confidence building measures that have been built into the treaty proposals. The concept of Confidence-Building Measures (CBMs) originated in the negotiations of the Conference on Security and Cooperation in Europe (CSCE) and has spread to most other bilateral and multilateral deliberations on East-West issues, including the CD. The fundamental purpose of CBMs is to generate trust between nations so that arms control and disarmament agreements can be achieved.⁴⁴ Within the framework of the current CW proposals submitted by the US and the USSR, the CBMs are an integral part of the convention and primarily involve declarations of current stockpiles, production plants, and agent filling facilities. This amounts to putting the cart before the horse, for a State Party has to accede to the convention before the CBMs become operable. What needs to be done is remove the CBMs from the convention and have them exist as a series of pre-convention agreements that can lead up to a complete ban of CW. Such a pre-agreement might be the declaration of stockpile quality and quantity by a State Party. Much has been written, both in open source and in classified intelligence files, about the CW capabilities of nations, and this information can serve as a basis for confidence building if there is reasonable agreement between it and the declaration.

In the event of a mismatch, two possibilities exist, one where the declarations exceed intelligence information, the other where the opposite is true. In the former case, faulty intelligence can be assumed and efforts to agree on a complete ban can continue. In the latter case it should be recognized that the CBM has failed and that the likelihood of

achieving a ban is greatly decreased. The risks of signing an agreement without a satisfactory reconciliation of the differences would be too great and new initiatives would have to be derived and deliberated. Some alternative CBMs could be exchange visits of technical experts to certain facilities, such as was done when the Pugwash Chemical Warfare Study Group visited the US chemical weapons disposal facility in Utah in 1979. Others could be exchange of technical data or protective equipment, exchange visits between chemical warfare defense schools, and visits to munitions depots. Taken individually or collectively, the successful completion of these and like measures over time would generate a climate of increasing trust and build a foundation upon which a ban of chemical warfare could be achieved.

The conclusion one draws from the entire discussion is that the US goal of a complete and verifiable ban of chemical weapons is not now attainable because the level of mistrust between the principal parties is too high. Reaching agreement on a comprehensive convention by a single effort will continue to fail until each state has confidence that the treaty will not be violated by another and that its security will not be jeopardized by its adherence to the provisions of the treaty. Such confidence cannot be engendered by a single act, but must be nurtured and built over time through a series of successfully completed pre-treaty agreements. Serial confidence-building measures will fix the goal of banning chemical weapons, and unlike the elusive fruit and drink that Tantalus incessantly tries to reach, allow it to be realized.

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